REMARKS/ARGUMENTS

Applicant respectfully requests reconsideration of claims 1-6 and consideration of new claims 10-16. Applicant has amended claims 1, 5, and 6 and added new claims 10-16 and respectfully submits that the new claims and the claims as amended differ from the prior art cited as described herein. If the Examiner differs in this conclusion, the Examiner is hereby requested to contact Applicant's representative for purposes of a telephone interview at the number listed below before any action (other than an allowance) is initiated.

I. Remarks Responsive to the Examiner's Rejection of Claims 1-6 Under 35 U.S.C. §102(b)

Wilding does not teach, suggest, or describe the claimed invention because unlike the claimed invention which isolates fluids within compartments of the microfluidic device, Wilding's mesoscale flow system mixes fluids together and cannot retain a volumes of different fluids within different compartments of the device.

The Examiner rejected claims 1-6 under 35 U.S.C §102(b) as being anticipated by Wilding et al. (US Patent No. 5,866,345). Applicant respectfully disagrees that Wilding et al. Anticipates the claimed invention, as amended, for at least the reasons stated below. Wilding is

directed to mesoscale flow system that has a series of interconnected flow channels and chambers. This flow system contains a substrate microfabricated to define a sample inlet port, and a mesoscale flow system that includes a sample flow channel extending from the inlet port. The mesoscale flow system of Wilding further includes an analyte detection region in fluid communication with the flow channel comprised of a binding moiety for specifically binding the analyte. The detection region is constructed with a mesoscale dimension sufficiently small to enhance binding of the binding moiety and the analyte. As Wilding describes at Column 8, lines 51-55 when filled to a hydraulically full volume the "flow of fluid is directed through the flows system." The examples given at Column 15, lines 38-41, Column 16, lines 46-48, Column 17, line 7-9, Column all illustrate the notion that the mesoscale flow device described in Wilding is used to mix fluids together rather than separate fluids into distinct compartments.

The claimed invention differs over Wilding in that it does not uses Wildings interconnected flow system to maintain fluidic isolation. Instead the device of the claimed invention comprises a first compartment configured to accept a first volume of fluid and a second compartment configured to accept a second volume of fluid which is lesser than the first volume of fluid. The first and second compartments are coupled by a barrier region having at least one groove with dimensions in a micron range. This groove provides a pathway between the first compartment and the second compartment where the first compartment is fludically isolated from the second compartment by the differences in the volume of fluid contained in each of the respective compartments.

For at least the reasons stated above amended claim 1 differs from the Wilding reference. Claims 2-6 are dependent upon independent claim 1 and therefore differ for the same reasons stated with respect to claim 1. Moreover, Wilding does not anticipate new independent claims 11 or 16 in that Wilding does not disclose a device having a compartment comprising a cell body where neuron processes of that cell body are capable of directed growth through at least one groove to another compartment within the device.

II. Remarks Responsive to the Examiner's Rejection of Claims 1-6 Under 35 U.S.C. §102(e)

Kirk does not teach, suggest, or describe the claimed invention because unlike the claimed invention which isolates fluids within compartments of the microfluidic device, Krik's test device mixes fluids together and cannot retain a volumes of different fluids within different compartments of the device.

The Examiner rejected claims 1-6 under 35 U.S.C §102(b) as being anticipated by Kirk et al. (US Application No. 2002/0168757). Applicant respectfully disagrees that Kirk et al. Anticipates the claimed invention, as amended, for at least the reasons stated below. Kirk describes a test device including a housing comprising: a support member; a top member mounted to the support member by being placed in substantially fluid-tight, conformal contact with the support member, wherein the support member and the top member are configured such that they together define a discrete chamber. The discrete chamber includes a first well region

including at least one first well; a second well region including at least one second well, the second well region further being horizontally offset with respect to the first well region in a test orientation of the device; and a channel region including at least one channel connecting the first well region and the second well region with one another. However, Kirk lacks a mechanism for isolating fluids within a particular compartment. Hence the claimed invention differs over Kirk in that it contains a groove that acts as a pathway between the first compartment and the second compartment where the first compartment is fludically isolated from the second compartment by the differences in the volume of fluid contained in each of the respective compartments.

For at least the reasons stated above amended claim 1 differs from the Kirk reference. Claims 2-6 are dependent upon independent claim 1 and therefore differ for the same reasons stated with respect to claim 1. Moreover, Kirk does not anticipate new independent claim 11 or 16 in that Kirk does not disclose a device having a compartment comprising a cell body where neuron processes of that cell body are capable of extending through at least one groove to another compartment within the device.

III. Remarks Responsive to the Examiner's Further Rejection of Claims 1-6 Under 35 U.S.C. §102(e).

Cremer does not teach, suggest, or describe the claimed invention because unlike the claimed invention which isolates fluids within compartments of the microfluidic device,

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Cremer's microfluidic device mixes fluids together and cannot retain a volumes of different fluids within different compartments of the device.

The Examiner rejected claims 1-6 under 35 U.S.C §102(b) as being anticipated by Cremer et al. (US Application No. 2004/0005720). Applicant respectfully disagrees that Cremer et al. Anticipates the claimed invention, as amended, for at least the reasons stated below. Cremer is directed to a method and apparatus for temperature gradient microfluidics. The apparatus described in Cremere provides a linear temperature gradient to an architecture suitable for massively parallel chemical or biochemical processing. The architecture is typically disposed on a substrate, e.g., glass, poly(dimethylsiloxane) or silicon. The apparatus comprises first and second temperature elements disposed essentially parallel to each other and in thermal contact with the substrate. When the temperature elements are held at different temperatures, a linear temperature gradient is formed in the substrate.

Cremer differs from the claimed invention because Cremer lacks a mechanism for maintaining fluidic isolation. Cremer does not describe a device that comprises a first compartment configured to accept a first volume of fluid and said second compartment configured to accept a second volume of fluid which is lesser than said first volume of fluid. The first and second compartments are coupled by a barrier region having at least one groove with dimensions in a micron range. This groove provides a pathway between the first compartment and the second compartment where the first compartment is fludically isolated from the second

compartment by the differences in the volume of fluid contained in each of the respective compartments.

For at least the reasons stated above amended claim 1 differs from the Cremer reference. Claims 2-6 are dependent upon independent claim 1 and therefore differ for the same reasons stated with respect to claim 1. Moreover, Cremer does not anticipate new independent claims 11 and 16 in that Cremer does not disclose a device having a compartment comprising a cell body where neuron processes of that cell body are capable of extending through at least one groove to another compartment within the device.

IV. Remarks Responsive to the Examiner's Rejection of Claims 7, 8 and 9 Under 35 U.S.C. §103.

The Examiner rejected claims 8, and 9 under 35 U.S.C §103 as being unpatentable over Wilding, et al. The Examiner also rejected claim 7 as being unpatentable over Wilding, et al. In further view of Fedun (US Patent No. 5,635,396) or Scott (US Patent No. 5,773,222). Applicant respectfully disagrees that such claims are unpatentable in that claims 7, 8 and 9 are dependent claims which depend upon independent claim 1. These dependent claims 7, 8, and 9 are allowable for at least the reasons stated above with respect to independent claim 1.

CONCLUSION

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Applicant respectfully submits that the amended independent base claims 1, 11 and 16 are novel and non-obvious in view of the references cited either alone or or in combination. As such, the dependent claims are allowable since they depend on allowable independent claims. For at least the reasons stated herein, Applicant respectfully submits that the new claims are in condition for allowance. If the Examiner differs in this conclusion, the Examiner is hereby requested to contact Applicant's representative for purposes of a telephone interview at the number listed below before any action (other than an allowance) is initiated.

Respectfully submitted,
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